RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NOBUYUKI NEMOTO, TARO ASAO,
KAZUO TANAKA, and HORACHI KAZUNORI

Appeal 2007-0396
Application 10/078,488
Technology Center 2600

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BOARD OF PATENT APPEALS
AND INTERFERENCES

Oral Hearing Held: March 8, 2007

Before KENNETH W. HAIRSTON, MAHSHID D. SAADAT, and JEAN R. HOMERE, Administrative Patent Judges.

ON BEHALF OF THE APPELLANTS:

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The above-entitled matter came on for hearing on Thursday, March 8, 2007, commencing at 9:00 a.m., at The U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Nick Guarino, Notary Public.

MS. BEAN: Calendar Number 6. Mr. Beckers.

MR. BECKERS: Good morning.

JUDGE HAIRSTON: Good morning.

MR. BECKERS: Thank you for taking the time to hear me.

JUDGE HAIRSTON: No problem.

MR. BECKERS: Before I get started, I wanted to say that, when I was going back over the reply brief, I detected an error in -- on one of the pages, in the paragraphs. I calculated a DB to give you an example of the attenuation.

JUDGE HAIRSTON: Um-hum.

MR. BECKERS: And my math skills at this point in my career are little bit rusty. And I have a correction page --

JUDGE HAIRSTON: Okay.

MR. BECKERS: -- that corrects that. I don't exactly know how to file that, but should I send a letter?

JUDGE HAIRSTON: Yes, I think, probably.

MR. BECKERS: I mean, it doesn't affect the basic premise of what it is that we're trying to do. It's a typo and --

JUDGE HAIRSTON: Okay. You probably should send in a separate communication, yes.

MR. BECKERS: Okay. There's a typo and -- essentially divided by zero in my example.

JUDGE HAIRSTON: Okay.

MR. BECKERS: So I'm a little embarrassed by that and --

JUDGE HAIRSTON: Yeah.

MR. BECKERS: -- wanted to let you know about that. And I'll send it in by a separate paper.

JUDGE HAIRSTON: Okay.

MR. BECKERS: With respect -- we have two issues before us today. The first issue is the 112 Paragraph 2 rejection. I think that the argument that we provided in the reply brief is sufficient to deal with that. I didn't want to -- I don't have any particular comments about that. I think that Claim 40 is clear and I think I tried to explain that in the reply brief, and so I'm essentially relying on the reply brief for that.

JUDGE HAIRSTON: Okay.

MR. BECKERS: The other issue is the rejection of the claims, Claim 3 and 8 over 40. That is the only remaining rejection in the case. And the Ford reference is essentially about trying to manage power level, changing the attenuation when things happen in the network. When the network is in a normal operation, the power level is maintained at a reference level, which means, as the power level fluctuates, the attenuation must change in that situation. And that's part of the example that I made the error in when I gave the example in the reply brief. And when something happens in that work, such as a drop, a disconnection, the Ford maintains the power level at the existing level, which again means that they must change the attenuation to be able to maintain it an existing level.

I mentioned, as really encapsulized at the last paragraph of each of the claims, Claims 3 and 8 -- essentially sets the attenuation, not the power level, and we set the attenuation. When there's a disconnected signal, the feedback circuit sets the attenuation amount of a variable attenuator, assigned to the optical signal component, to a predetermined value once we

lock it in, and if you lock in the attenuation value as the power level fluctuates, the power level on the outside, if the input fluctuates, the output's going to fluctuate. We think that's very, very different from what's going on in Ford.

And as a matter of fact, if you look at Ford and do a word search on Ford using the word attenuation, it appears one time in the case. The word attenuator appears a lot, because you have to adjust the attenuation of an attenuator to be able to maintain a power level. But the word attenuation appears one time and it happens to appear in Column 1 at about Line 46. Okay. And so we believe that the Ford reference does not teach or suggest or provide any motivation whatsoever for jumping to the conclusion that attenuation -- setting an attenuation in the case of a disconnect to a predetermined value is something to do when there's trouble on a network.

JUDGE HOMERE: Okay. So let's be clear here, counselor.

MR. BECKERS: Um-hum.

JUDGE HOMERE: It appears to us that your position is Ford is compensating for a signal drop by setting the voltage -- the output voltage on the attenuator at a predetermined amount, right?

MR. BECKERS: They essentially meant -- they talk about power level.

JUDGE HOMERE: Yes. Where is --

MR. BECKERS: They talk about -- they set the output power level at the existing level that it was at the time of the drop.

JUDGE HOMERE: Exactly. So they --

MR. BECKERS: Right.

JUDGE HOMERE: -- do have to keep it to maintain it constant.

MR. BECKERS: They want to maintain the power level constant.

JUDGE HOMERE: Constant.

MR. BECKERS: So as the -- as the input level fluctuates --

JUDGE HOMERE: Yeah. So we're referring to the output voltage because we have no control over the current itself. So --

MR. BECKERS: Yeah, essentially the level -- the power level of the light signal, that's right.

JUDGE HOMERE: Okay.

MR. BECKERS: Right.

JUDGE HOMERE: But whereas the invention itself is -- sets a predetermined value for the attenuation.

MR. BECKERS: Right. And so if the input fluctuates, the output's going to fluctuate.

JUDGE HOMERE: And technically --

MR. BECKERS: And that's essentially exactly the opposite of what Ford is trying to do.

JUDGE HOMERE: Okay. And technically, on Page 7 of your appeal brief --

MR. BECKERS: Right.

JUDGE HOMERE: -- you give a very nice illustration. You are J. Randall Beckers, right?

MR. BECKERS: Right. That's correct.

JUDGE HOMERE: Okay. Yes, yes. You give an illustration whereas this --

MR. BECKERS: Yes, that's --

JUDGE HOMERE: -- here can be represented --

MR. BECKERS: Yes.

JUDGE HOMERE: -- by Ohm's Law, right?

MR. BECKERS: Well, I think it can.

JUDGE HOMERE: Yeah, yeah.

MR. BECKERS: I think it's fair to do that.

JUDGE HOMERE: I mean --

MR. BECKERS: I think it's fair.

JUDGE HOMERE: -- which I think is somewhat -- you know, somewhat reasonable.

MR. BECKERS: Right.

JUDGE HOMERE: Okay. So you're saying that, under your -- under the invention, the Appellant's invention, right. So when you're looking at Figure 6 --

MR. BECKERS: Of?

JUDGE HOMERE: Of the drawing.

MR. BECKERS: Of my drawings, yes. Okay.

JUDGE HOMERE: Your drawing.

MR. BECKERS: Yes.

JUDGE HOMERE: Okay. So that's -- we're looking Ohm's Law. So the input, you'd have I coming in,
right --

MR. BECKERS: Right.

JUDGE HOMERE: -- for the variable attenuator, okay. So the attenuator itself, you have R?

MR. BECKERS: R, that's right.

JUDGE HOMERE: Okay. And the output, you'd have V, right?

MR. BECKERS: Right, V.

JUDGE HOMERE: Okay. So V equals IR. Right.

MR. BECKERS: That's what I think.

JUDGE HOMERE: Okay. Yeah, yeah, that's -- that's established here. Okay. So under this formula here, under the invention --

MR. BECKERS: Right.

JUDGE HOMERE: R would be a predetermined value.

MR. BECKERS: Yes. And that's what the claim says.

JUDGE HOMERE: Okay.

MR. BECKERS: The claim says R is a -- R is essentially a predetermined value.

JUDGE HOMERE: A predetermined value, okay. And then I, we have no control over I.

MR. BECKERS: That's exactly right.

JUDGE HOMERE: I is what it is. Okay. So you say by fixing I -- by setting R to a predetermined value --

MR. BECKERS: Right.

JUDGE HOMERE: -- we'd find V. Now tell me about V, the output voltage. What is the objective, the overall objective of V here, as far as the invention is concerned?

MR. BECKERS: Well, as far as the invention is concerned, they want to be able to run a signal through this attenuator that can be detected on the other side, on the downstream side.

JUDGE HOMERE: Okay.

MR. BECKERS: But it's not so strong as to destroy the next -- the

signal repeater further downstream.

JUDGE HOMERE: Okay.

MR. BECKERS: In other words, they don't want an impulse to pass through this thing and blow up all of the --

JUDGE HOMERE: Okay.

MR. BECKERS: -- all of them downstream.

JUDGE HOMERE: So ultimately --

MR. BECKERS: And that's essentially what that Claim 4 says.

JUDGE HOMERE: That's true.

MR. BECKERS: That's right.

JUDGE HOMERE: And I agree with you, I agree with you. What other -- I mean -- that's what the invention is doing. I'm not saying that, well, that's what Claim 4 is actually doing.

MR. BECKERS: Right.

JUDGE HOMERE: Essentially, you need to argue --

MR. BECKERS: Right.

JUDGE HOMERE: -- what it's doing --

MR. BECKERS: Right.

JUDGE HOMERE: -- so I guess we'll address that.

MR. BECKERS: Right.

JUDGE HOMERE: But I would submit to you that Claim 4 is not actually saying what you just said about, you know, that's how the inventions operate -- but that's something else. Okay. So the overall objective here is to set the voltage -- the output voltage, right --

MR. BECKERS: Right.

JUDGE HOMERE: -- to such a value that it can -- it's high enough so it can be detected by the detector, right?

MR. BECKERS: Right.

JUDGE HOMERE: And it's not too high --

MR. BECKERS: Right.

JUDGE HOMERE: -- that it doesn't destroy the next circuit.

MR. BECKERS: That it destroys the -- yeah, destroys the next circuit.

JUDGE HOMERE: Right. Okay.

MR. BECKERS: That's right.

JUDGE HOMERE: So ultimately, you want to come up with the correct value for the voltage, right? The output voltage.

MR. BECKERS: Yes.

JUDGE HOMERE: Okay. Now let's turn to four.

MR. BECKERS: The better equation, though, is in the -- the better equation for looking at that is probably in the reply brief where I stuck the actual optical signal attenuation equation in the reply brief. It's essentially the same equation.

JUDGE HOMERE: Yeah. Okay.

MR. BECKERS: Okay.

JUDGE HOMERE: Yeah. Well, let's use that example here. Okay.

MR. BECKERS: Okay.

JUDGE HOMERE: So let's turn to Ford now.

MR. BECKERS: To Ford, okay.

JUDGE HOMERE: Yeah. Ford states -- you have the same equation, V equals IR.

MR. BECKERS: Right.
JUDGE HOMERE: Right? And Ford says that you want to maintain V at its current level --
MR. BECKERS: Right.
JUDGE HOMERE: -- such that it does not destroy the next circuit.
MR. BECKERS: I don't think that's what they're trying to do. Okay, they're not trying to not destroy the other circuit. What they're trying to do is they got a system that is designed to keep the circuit from oscillating all of the place, crazy.
JUDGE HOMERE: Okay. So let me rephrase --
MR. BECKERS: Okay.
JUDGE HOMERE: Let me rephrase that.
MR. BECKERS: And so they're not really trying to keep the circuit --
JUDGE HOMERE: Let me rephrase that.
MR. BECKERS: Okay.
JUDGE HOMERE: Let me rephrase that. Okay. So under Ford, you're trying to maintain the voltage at its current value, at its current level, such that the system is not going to be stable.
MR. BECKERS: Yes, that's what they say in Paragraph 2, at --
JUDGE HOMERE: -- stability. Okay.
MR. BECKERS: -- Line 5.
JUDGE HOMERE: Okay. But --
MR. BECKERS: I mean Column 2, Line 5.
JUDGE HOMERE: Okay.
MR. BECKERS: I'm sorry.

JUDGE HOMERE: So in order to do that, so we say that, you know, this value, the voltage itself, is constant.

MR. BECKERS: Yes, I think that's correct.

JUDGE HOMERE: Therefore the current itself, as in the invention, we have no control over, right?

MR. BECKERS: Right.

JUDGE HOMERE: Okay. So therefore -- so we set the voltage to a constant value, such that -- stability, so R, you know, is going to vary.

MR. BECKERS: It has to change.

JUDGE HOMERE: Okay. So --

MR. BECKERS: And actually what they try to do is they don't really try to change it immediately. It's not an immediate feedback system. They try to do it with a little bit of phase delay so that they can kind of dampen the oscillations in the system. So they have a little phase delay in the way that they change it. So --

JUDGE HOMERE: Okay.

MR. BECKERS: -- they're trying to maintain it within a certain range.

JUDGE HOMERE: Okay.

MR. BECKERS: They're trying keep this voltage within a certain range.

JUDGE HOMERE: Okay.

MR. BECKERS: But they are targeting a reference level when the system is active and they target the previous existing -- the existing level when the -- when a disconnect -- drop -- they don't talk about disconnect, they talk about a drop.

JUDGE HOMERE: Okay. So --

MR. BECKERS: But it has a little difference in it.

JUDGE HOMERE: -- it is your position here, counselor, that all the - - in your -- in the invention, by the time you determine -- you set R to a predetermined value in order to find a reference level or the optimum level for the output voltage, okay. Whereas, in Ford you set the voltage to the optimum value that you're looking for, okay, and you determine R. You're saying that that's different?

MR. BECKERS: Oh, yeah, I think it's --

JUDGE HOMERE: Based on Ohm's Law. Because R --

MR. BECKERS: Yeah, I think that's different, yeah.

JUDGE HOMERE: -- R is technically defined as -- would be described under this equation as V over I, right?

MR. BECKERS: Yes.

JUDGE HOMERE: Yes. Whereas, in your invention, you'd have -- how would you determine R? R is predetermined, right?

MR. BECKERS: Yeah, it's set --

JUDGE HOMERE: Okay.

MR. BECKERS: -- when V and R fluctuate.

JUDGE HOMERE: Okay. So you're still have V over I.

MR. BECKERS: Right.

JUDGE HOMERE: Now let's -- you have an example where you actually -- you know, use values to illustrate this.

MR. BECKERS: Yeah. And that's where I made -- in the reply brief I made a mistake in trying to --

JUDGE HOMERE: Yeah, but --

MR. BECKERS: -- do that, yeah.

JUDGE HOMERE: But you said that, for instance -- let's say, for instance, the optimum value that we're looking for the voltage, it's 10 volts.

MR. BECKERS: Okay.

JUDGE HOMERE: Ten volts, right? So you start off -- in four, you start off with 10 volts, okay, and I -- let's say I -- well, you know, we went to 75. We have no control over I. I is one amp.

MR. BECKERS: Okay.

JUDGE HOMERE: Okay -- example.

MR. BECKERS: Right.

JUDGE HOMERE: Okay. So under Ford, R would be one ohm, right?

MR. BECKERS: Four to one. Yeah, four times one is one. That's right.

JUDGE HOMERE: Yes, yes. Okay. Yeah. Whereas, in yours, what would R be? What would be the predetermined value for R?

MR. BECKERS: It would be a predetermined value.

JUDGE HOMERE: Yeah, but what would be that value?

MR. BECKERS: And it would -- and it would stay fixed.

JUDGE HOMERE: Under this equation here, using the number that we're using, what would be the value for R? One ohm.

MR. BECKERS: Well, yeah, it would be one ohm.

JUDGE HOMERE: Yeah, exactly.

MR. BECKERS: But if the signal -- but in our situation, that resistance doesn't change. Okay. So if we raise the --

JUDGE HOMERE: Oh, you've got to change --

MR. BECKERS: If we raise the current -- if we raise the current --

JUDGE HOMERE: -- for that particular --

MR. BECKERS: I'm sorry.

JUDGE HOMERE: -- value, it doesn't change for a particular value of V, because for the optimum value of V, the resistance itself doesn't change, because you want that value -- because you have to understand that the output value is dependent upon the value of the resistance of the attenuator, right?

MR. BECKERS: Right.

JUDGE HOMERE: Therefore, as V changes, the resistance is going to change too. So that predetermined value is very dependent. I suggest to you that the predetermined value or that value of the output is dependent upon the value of the voltage -- the value of the resistance --

MR. BECKERS: But our resistance stays constant and their resistance changes.

JUDGE HOMERE: Yeah, but it stays constant for that particular -- for that optimum value of the output voltage.

MR. BECKERS: For our situation, whatever that value of output voltage is that's determined, our resistance always stays the same. And the input current, if it fluctuates, the voltage on the output also fluctuates. In Ford, it's exactly the opposite. As the input voltage -- as the input current fluctuates, the output voltage stays the same and the resistance fluctuates.

JUDGE HOMERE: Yeah, but the output voltage itself, as we --

MR. BECKERS: But our invention is about --

JUDGE HOMERE: -- provided by that -- I mean, you have to look at

the equation. I mean -- you look at that equation, the voltage itself is dependent upon the relationship of IR, right? So as the value -- you know, as the value -- as the value changes, of course the voltage is going to be different. Okay. So the optimum value of the voltage that you're looking for is -- you know, it's one thing, because we don't have any control over R because the circuit tells us what it is.

MR. BECKERS: But we don't look for an optimum value for the voltage.

JUDGE HOMERE: No, but you're looking for that value that's not going to destroy the next circuit.

MR. BECKERS: Yeah, but that's not necessarily an optimum value. I mean, you know, in the context of what you're talking about, they try to constrain that voltage to this very narrow range, okay?

JUDGE HOMERE: Okay.

MR. BECKERS: That voltage to this narrow -- very narrow range. We don't try to constrain it at all. I mean, if perchance some gigantic, hugely gigantic current flows into the system, enough to destroy the downstream signal, a downstream relay, our system will pass it straight through. We'll still destroy it and I mean, I think that's a big difference.

JUDGE HOMERE: Yours will destroy it?

MR. BECKERS: Yeah. Well, let me give you an example. Let's say that the engineers think, okay, that if we could set the resistance at one ohm in your example, that that would be enough to prevent downstream destruction of a relay. Okay. And let's say they banked on that because they think one amp is the maximum current that they're going to get. The engineers are wrong, right?

JUDGE HOMERE: Um-hum.

MR. BECKERS: And I was wrong. I'm an engineer. I was wrong in my equation. It just happens. Okay. And in that situation, if we got a current that was 100 amps, 100 times our input value, it would be passed straight through to 100 times the voltage in our situation and it would destroy that downstream relay.

JUDGE HOMERE: So are you saying that this invention is not the one where it's supposed to be --

MR. BECKERS: No, that's not what I'm saying.

JUDGE HOMERE: It's going to destroy the next circuit, but it's not --

MR. BECKERS: No, I'm saying it's designed not to. Now, we can't always predict that all designs will work and in our situation, it would be destroyed. In the situation where you operate under Ford, Ford would clamp down on it because of the feedback relationship that they've got and maintain that voltage low. Okay. And so in that situation, I think that we're very different. Now, I didn't --

JUDGE HOMERE: Because, in your -- in that case, in the example that you provided, the next circuit would be destroyed?

MR. BECKERS: It could be. I'm not saying it would. You know, this is -- you know, you're asking me to speculate about an engineering design that might be out there in the world.

JUDGE HOMERE: Well, you wrote this application. I mean, you know better than I do how it operates, right?

MR. BECKERS: And I'm doing the best that I can.

JUDGE HOMERE: Of course. I understand that. In this particular case that you presented, that next circuit would be destroyed?

MR. BECKERS: I'm saying if the design parameters of the system -- in a real-world implemented system were wrong, okay --

JUDGE HOMERE: Okay.

MR. BECKERS: -- then our system would --

JUDGE HOMERE: Because --

MR. BECKERS: If it stayed within the design -- if it stayed within the design -- if it --

JUDGE HOMERE: Now remember what the inventions says. It's supposed to compensate --

MR. BECKERS: Right.

JUDGE HOMERE: -- for a certain current. So you're saying that if there's a certain current, and then you guys made a mistake, then that next circuit, the circuit on the next -- will be destroyed?

MR. BECKERS: I'm saying that if it was outside --

JUDGE HOMERE: On the --

MR. BECKERS: -- if it was outside -- what I'm saying is if it was outside the design parameters of the implemented circuit, the way that it was designed, it's possible.

JUDGE HOMERE: Okay.

MR. BECKERS: I'm not saying that it would.

JUDGE HOMERE: Sure.

MR. BECKERS: Okay. But I'm trying to give you -- I'm trying to give you an example of where -- you know, you asked, what is the fundamental difference? Well, the fundamental difference is because we set this resistance at this set value, okay, and we do not try to control the output

voltage. Unexpected things can occur.

JUDGE HOMERE: Okay. Do you have anything else?

MR. BECKERS: Not officially. I did have a question for everyone.

JUDGE HAIRSTON: You have a question?

MR. BECKERS: Yeah, but it's not about this hearing. It's about something else.

JUDGE HAIRSTON: Oh.

JUDGE HOMERE: I don't have --

JUDGE HAIRSTON: Do you have any other --

JUDGE SAADAT: I have a question. What limitation in the claim do you think is most crucial to show that kind of output that you just described, rather than --

MR. BECKERS: The output.

JUDGE SAADAT: -- keeping the output fixed? You said it fluctuates with the input. Is that the variable attenuator?

MR. BECKERS: Well, with respect to Claim 3 and Claim 8, I think it's the last clause. Now that last clause doesn't say anything about this result or benefit that you were talking about and it doesn't really say anything about how that voltage continues to fluctuate, but I think, under the laws of physics, if we set that predetermined value -- that attenuation to a predetermined value, physics sort of requires what I was talking about to have to happen. And we didn't say anything directly about that in this claim.

JUDGE HAIRSTON: Okay. Thank you.

MR. BECKERS: Okay.

JUDGE HAIRSTON: You said you had a question?

MR. BECKERS: Yeah, I do. This morning I was on my way to here

and I ride the subway and there was some trouble on the Red Line and I started getting really kind of worried that I was not going to make it here on time. And I asked the clerk out there whether or not there was some way to find out whether or not my order, in the arguments, so that if I had been last, like I am today, I wouldn't have worried so much on the subway, and apparently there's no way to do that.

JUDGE HAIRSTON: I'm not certain.

MR. BECKERS: Yeah. She says there's no way.

JUDGE HAIRSTON: You mean if you called us, whether you can find out whether you're last.

MR. BECKERS: She said if you call you might find out, but it may not be set at that point in time, or they may not tell you. And I was just wondering if there was some system --

JUDGE HAIRSTON: If you have an emergency, I can't imagine, if you explain your emergency, they'd -- if you called the office and tell us that you're -- you have an emergency --

MR. BECKERS: I don't have a cell phone.

JUDGE HAIRSTON: Oh.

MR. BECKERS: So if I'd been stuck on the subway, that's the reason I'm asking this question, I don't have a cell phone, so --

JUDGE HAIRSTON: No, what happens, if they call Calendar Number 1 and if -- Calendar Number 4 and if you're not here, they'll just put you last, automatically.

MR. BECKERS: Oh, okay, okay, okay, okay.

JUDGE HAIRSTON: Yeah, I wouldn't -- if you come in --

MR. BECKERS: Don't worry about it. Okay.

JUDGE HAIRSTON: Yeah.

MR. BECKERS: I didn't know how that worked and that's the reason I wanted to ask about it.

JUDGE HAIRSTON: But you've got to get here before the panel adjourns.

MR. BECKERS: Yeah, that's right, that's right. Of course.

JUDGE HAIRSTON: I misunderstood you.

MR. BECKERS: Yeah, of course.

JUDGE HAIRSTON: Yes, no problem, no problem at all.

MR. BECKERS: Okay. Thank you very much.

JUDGE HAIRSTON: Okay.

MR. BECKERS: Thank you for your time and have a nice day.

JUDGE HAIRSTON: Thank you.

MR. BECKERS: Stay warm.

JUDGE HAIRSTON: You do the same.

MR. BECKERS: Thank you.

(Whereupon, the proceedings concluded.)